United Parcel Service Tests of Continuous Descent Arrival

In 2002 and 2004, United Parcel Service (UPS) with NASA involvement conducted extensive tests of the Continuous Descent Arrival (CDA) approach alternative. With CDA, aircraft, instead of using vectoring and altitude changes on descent, descend from cruise altitude on an optimal path, both horizontally and vertically, to a landing on the runway.

The top graphic illustrates the compact nature of the flight paths, as well as reduced noise impact on the airport environs and surrounding neighborhoods, which are indicated by the gray street map overlay. Flight paths are indicated by the red lines coming in from the left of the illustrations.

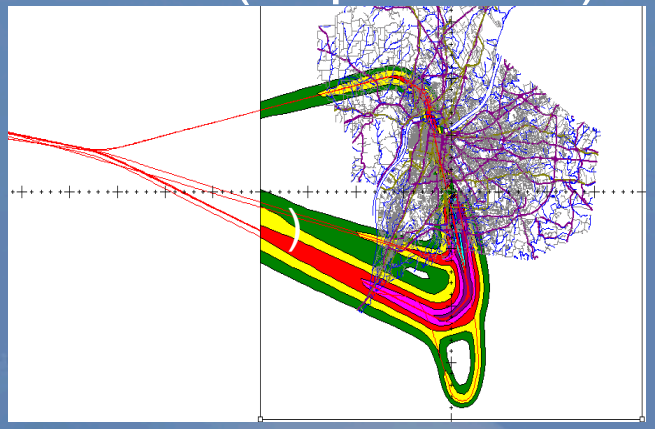
The Baseline graphic illustrates typical noise impact and aircraft congestion areas.

Full color tracks represent about the last 10 miles of the flight; the entire size of each graphic represents about 30 miles.

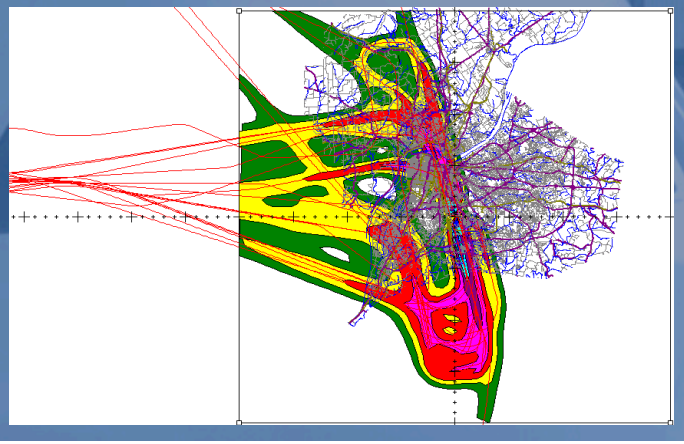
Slide provided by Leading Edge guest Robert Hilb, pilot and former manager of the Advanced Flight Systems Department at United Parcel Service (UPS).

Trial Results

Reduced Noise Impact
CDA (Sept 14 -18)



Baseline (Sep 28-Oct 2)



- Continuous Descent Arrivals – October 2004 Trials
  - 30% reduction in noise (up to 6 dB)
  - 34% reduction in nitrous oxide (NOx) emissions
    - Below 3000 feet
  - 250 to 465 pounds less fuel burn per flight